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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,960	07/17/2003	David F. Arlasky	7444 (284*3)	6054
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Faier and Faier, P.C. 566 West Adams Street Chicago, IL 60661				
			EXAMINER SAN MARTIN, EDGARDO	
			ART UNIT 2837	PAPER NUMBER

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/623,960	Applicant(s) ARLASKY, DAVID F.	
	Examiner Edgardo San Martin	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 42-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 42-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 42 - 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura (JP 04081507) in view of Weiss (US 4,263,981), and further in view of Ross (US 2,076,827).

With respect to claims 42, 54, 55 and 60, Nakamura teaches a muffler comprising a shell (Fig.3, Item 23) with an expansion chamber tube (Fig.3, Items 32 and 34) coaxially attached to the shell such that an interior of the shell and an exterior of the expansion chamber tube form a sound suppression sleeve containing sound suppression material (Fig.3, Items 33 and 37), wherein an interior of the expansion chamber tube forms an expansion chamber (Fig.3, Item a), the expansion chamber tube is perforated with apertures (Fig.3, Items 31 and 35), such that the expansion chamber is in communication with the materials in the sound suppression sleeve, an inlet tube (Fig.3, Item 39) is attached to an inlet (Fig.3, Item 25) of the shell such that an inlet tube interior is in communication with the expansion chamber and a guide vane (Fig.3, Item 38) for generating a vortex flow which induce passage of exhaust gases through the expansion chamber to exit through the outlet (Fig.3. Item 27) (Fig.3, Abstract), but fails to disclose wherein the expansion chamber tube is perforated with apertures to achieve

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specifically about 40-80% porosity, and a rotatable propeller is attached to the muffler such that the propeller is capable of rotation when exhaust gas passes from the inlet tube into the expansion chamber, and wherein the propeller spins the exhaust gas to facilitate its passage through the expansion chamber, and through an outlet in the shell.

Nevertheless, Weiss teaches an expansion chamber tube being perforated with apertures to achieve about 40-80% porosity (Col.3, Line 55 – Col.4, Line 10).

On the other hand, Ross teaches a muffler comprising a passage tube including a rotatable propeller (Fig.1, Item 14) being attached to the muffler such that the propeller is capable of rotation when exhaust gas passes from the inlet tube (Fig.1, Item 11) into the passage tube, and wherein the propeller spins the exhaust gas to facilitate its passage through the expansion chamber, and through an outlet (Fig.1, Item 12) in the passage tube; wherein the gases freely exit the outlet tube without back pressure on the engine (Page 2, Lines 1 - 5).

It would have been obvious to a person with ordinary skill in the art at the time of the invention was made to place the Ross rotatable propeller in the inlet tube of the Nakamura expansion chamber, and to provide a 40-80% porosity in the tube as disclosed by the Weiss design because the complete combination would provide a muffler structure that would effectively suppress noise while increase the performance and efficiency of an engine, increasing the engine power and saving the fuel of an vehicle by eliminating back pressure effect.

With respect to claims 43, 44 and 57, Ross teaches (regarding claim 44) wherein the propeller (Fig.1, Item 14) is mounted on a shoulder screw (Fig.1, Item 20) that is

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rotatably mounted in a bearing (Fig.1, Item 21). Regarding claim 43, the Examiner considers that it would have been obvious to one of ordinary skill in the art at the time the invention was made to mount the propeller on a bearing that is rotatably mounted on a shoulder screw, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70; and since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. In re Einstein, 8 USPQ 167. In addition, the Examiner considers that it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a Teflon-filled bronze bearing, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

With respect to claims 45, 46 and 59, Weiss et al. teach wherein the expansion tube has between about 75% to about 90% greater flow cross-sectional area than the inlet tube.

With respect to claims 47 and 48, Ross teaches the rotatable propeller type blade assembly comprising at least two blades (Fig.1).

With respect to claims 49, 50 and 56, Ross teaches the rotatable propeller's blades (Fig.1, Item 14) having a degree of inclination of the blade with respect to the path of flow (Page 1, Line 38+). In addition, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

With respect to claim 51, the Examiner takes Official Notice that it is well known in the art of acoustics to employ fiberglass, glass wool, copper wool, copper strands, steel wool and a combination of the mentioned materials as sound suppressing materials. These materials could withstand high temperatures while exhibiting good sound suppressing characteristics.

With respect to claims 52 and 53, Nakamura teaches wherein the exhaust chamber system is joined directly to an internal combustion engine, or wherein the exhaust chamber system is joined indirectly to an internal combustion engine (Fig.1).

With respect to claims 58 and 61, Nakamura and Ross teach wherein the rotation of the rotatable propeller forces the exhaust gases into a tightly spun vortex as the exhaust gases expand in the expansion chamber creating a vacuum to draw additional exhaust gases from the internal combustion engine (Nakamura: Fig.3, Abstract; Ross: Fig.1, Page 1, Line 38 – Page2, Line 5).

Response to Arguments


2. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. The Examiner considers that the obvious combination of the patents to Nakamura, Weiss et al. and Ross teach the limitations described in the claims, as discussed above.

Contact Information

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edgardo San Martín whose telephone number is (571) 272-2074. The examiner can normally be reached on 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula Bradley can be reached on (571) 272-2800 ext.33. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Edgardo San Martín
Primary Examiner
Art Unit 2837
Class 181
February 20, 2006